

METHOD AND APPARATUS FOR ADAPTIVELY CODING A DATA SIGNAL

5 [This application claims benefit of U.S. provisional patent application
60/206,133, filed May 22, 2000, and hereby incorporated herein by reference in
its entirety.]

The invention relates to data transmission and, more particularly, the
10 invention relates to adaptive coding of a data signal that is transmitted over an
information channel.

BACKGROUND OF THE DISCLOSURE

The transmission of data signals over a communication network is
15 subject to various problems in a transmission medium or channel. Problems
such as noise, channel fading and multipath may cause errors in decoding the
transmitted signal. To counter these problems, additional or redundant
information is transmitted with the signal. A corresponding receiver would use
this redundant information to perform error correction on the received signal.
20 Otherwise, the receiver may either erroneously decode the received signal or
require retransmission of the data signal.

In a digital data signal, the additional information is typically in the
form of additional or redundant bits in a digital bit sequence. For example, to
provide error correction in an MPEG-2 (MPEG: Moving Pictures Expert Group)
25 packet, twenty additional bytes are added to the 179 bytes of data. Moreover,
to combat severe channel interference, the amount of additional bits may
approach the amount of data transmitted. A convolutional encoder having a
0.5 code rate would, for example, generate eight output bits for every four input
bits of the digital bit sequence.

30 The use of additional error correcting bits is provided at the expensive of
having a lower data transmission rate. As such, if the transmission medium or
information channel is of high quality, these additional error correcting bits
become creates an unnecessary overhead for the receiver. Therefore, a need